

Listing of Claims

1-10. (Canceled)

11. (Currently amended) A method of ~~inducing~~enhancing maturation of an immature macrophage or an immature dendritic cell that expresses Discoidin Domain Receptor 1 (DDR1), comprising:

contacting the immature macrophage or the immature dendritic cell with an effective amount of a DDR1-activating antibody that specifically binds DDR1 in the presence of a differentiation agent that comprises granulocyte-macrophage-colony stimulating factor (GM-CSF), interleukin-4 (IL-4), tumor necrosis factor- α (TNF- α), or a combination thereof, wherein the DDR1-activating antibody enhances the differentiation agent-mediated maturation of the immature macrophage or the immature dendritic cell,
thereby ~~inducing~~enhancing maturation of the immature macrophage or the immature dendritic cell that expresses DDR1.

12. (Canceled)

13. (Currently amended) The method of claim 11, further comprising contacting the immature macrophage or the immature dendritic cell that expresses DDR1 with an agent that up-regulates the expression of DDR1, wherein the agent that up-regulates DDR1 expression comprises ~~tumor necrosis factor- α~~ , interleukin-1 β , lipopolysaccharide, phytohemagglutinin, fetal calf serum or a combination thereof.

14-17. (Canceled)

18. (Previously presented) The method of claim 11, wherein the antibody is a monoclonal antibody.

19. (Canceled)

20. (Currently amended) The method of claim 11, further comprising contacting the

immature macrophage or the immature dendritic cell with a differentiation agent that enhances monocyte or dendritic cell maturation, wherein the differentiation agent comprises ~~tumor necrosis factor- α~~ , lipopolysaccharide, or phorbol 12-myristate 13-acetate, or a combination thereof.

21. (Original) The method of claim 11, wherein the immature macrophage or the immature dendritic cell is *in vivo*.

22. (Original) The method of claim 11, wherein the immature dendritic cell or the immature macrophage is *in vitro*.

23. (Currently amended) A method for producing an antigen presenting macrophage or dendritic cell, comprising

contacting an immature macrophage or an immature dendritic cell with an agent that activates Discoidin Domain Receptor 1 (DDR1) in the presence of an antigen and a differentiation agent, wherein the differentiation agent comprises granulocyte-macrophage-colony stimulating factor (GM-CSF), interleukin-4 (IL-4), tumor necrosis factor- α (TNF- α), or a combination thereof, and wherein the DDR1-activating agent is a DDR1-activating antibody that specifically binds DDR1 and enhances the differentiation agent-mediated maturation of the immature macrophage or the immature dendritic cell,

thereby producing an antigen presenting mature dendritic cell or an antigen presenting macrophage.

24. (Previously presented) The method of claim 23, wherein the antigen comprises a protein, a polypeptide, a polysaccharide, a DNA molecule, a RNA molecule, a whole cell lysate, an apoptotic cell, or any combination thereof.

25. (Previously presented) The method of claim 23, wherein the antigen is a viral, bacterial or fungal antigen.

26.-54. (Canceled)

55. (Previously presented) The method of claim 11, wherein contacting the immature macrophage or the immature dendritic cell with an effective amount of the DDR1-activating antibody activates intracellular signaling molecules.

56. (Previously presented) The method of claim 55, wherein the activated intracellular signaling molecules comprise p38 MAP kinase or Shc.

57. (Currently amended) The method of claim 11, wherein contacting the immature macrophage or the immature dendritic cell with an effective amount of the DDR1-activating antibody up-regulates and releases chemokines or cytokines from a mature macrophage or dendritic cell.

58-59. (Canceled)

60. (Currently amended) A method of ~~inducing~~ enhancing maturation of an immature macrophage or an immature dendritic cell that expresses Discoidin Domain Receptor 1 (DDR1), comprising contacting the immature macrophage or the immature dendritic cell with an effective amount of:

—— (i) ~~a DDR1 activating agent, wherein the activating agent is a DDR1-activating antibody that specifically binds DDR1~~ in the presence of;

—— (ii) ~~an agent that up-regulates the expression of DDR1, wherein the agent is a granulocyte macrophage colony stimulating factor; and~~

—— (iii) ~~a differentiation agent, wherein the differentiation agent is CD40~~ that comprises granulocyte-macrophage-colony stimulating factor (GM-CSF), wherein the DDR1-activating antibody enhances the GM-CSF-mediated maturation of the immature macrophage or the immature dendritic cell,

thereby ~~inducing~~ enhancing maturation of the immature macrophage or the immature dendritic cell that expresses DDR1.

61. (New) The method of claim 60, further comprising contacting the immature macrophage or the immature dendritic cell that expresses DDR1 with an agent that up-regulates the expression of DDR1, wherein the agent that up-regulates DDR1 expression comprises tumor necrosis factor- α , interleukin-1 β , lipopolysaccharide, phytohemagglutinin, fetal calf serum, or a combination thereof.

62. (New) The method of claim 60, further comprising contacting the immature macrophage or the immature dendritic cell with a differentiation agent that enhances monocyte or dendritic cell maturation, wherein the differentiation agent comprises tumor necrosis factor- α , lipopolysaccharide, or a combination thereof.

63. (New) The method of claim 60, wherein the antibody is a monoclonal antibody.

64. (New) A method of enhancing maturation of an immature macrophage or an immature dendritic cell that expresses Discoidin Domain Receptor 1 (DDR1), comprising:
contacting the immature macrophage or the immature dendritic cell with an effective amount of a DDR1-activating antibody that specifically binds DDR1 in the presence of a differentiation agent that comprises granulocyte-macrophage-colony stimulating factor (GM-CSF), interleukin-4 (IL-4), and tumor necrosis factor- α (TNF- α), wherein the DDR1-activating antibody enhances the differentiation agent-mediated maturation of the immature macrophage or the immature dendritic cell,
thereby enhancing maturation of the immature macrophage or the immature dendritic cell that expresses DDR1.

65. (New) The method of claim 64, further comprising contacting the immature macrophage or the immature dendritic cell that expresses DDR1 with an agent that up-regulates the expression of DDR1, wherein the agent that up-regulates DDR1 expression comprises interleukin-1 β , lipopolysaccharide, phytohemagglutinin, fetal calf serum, or a combination thereof.

66. (New) The method of claim 64, further comprising contacting the immature

macrophage or the immature dendritic cell with a differentiation agent that enhances monocyte or dendritic cell maturation, wherein the differentiation agent comprises tumor necrosis factor- α , lipopolysaccharide, or a combination thereof.

67. (New) The method of claim 64, wherein the antibody is a monoclonal antibody.

68. (New) A method of enhancing maturation of an immature macrophage or an immature dendritic cell that expresses Discoidin Domain Receptor 1 (DDR1), comprising:

contacting the immature macrophage or the immature dendritic cell with an effective amount of a DDR1-activating antibody that specifically binds DDR1 in the presence of a differentiation agent that comprises tumor necrosis factor- α (TNF- α), wherein the DDR1-activating antibody enhances the TNF- α -mediated maturation of the immature macrophage or the immature dendritic cell,

thereby enhancing maturation of the immature macrophage or the immature dendritic cell that expresses DDR1.

69. (New) The method of claim 68, further comprising contacting the immature macrophage or the immature dendritic cell that expresses DDR1 with an agent that up-regulates the expression of DDR1, wherein the agent that up-regulates DDR1 expression comprises interleukin-1 β , lipopolysaccharide, phytohemagglutinin, fetal calf serum, or a combination thereof.

70. (New) The method of claim 68, further comprising contacting the immature macrophage or the immature dendritic cell with a differentiation agent that enhances monocyte or dendritic cell maturation, wherein the differentiation agent comprises lipopolysaccharide.

71. (New) The method of claim 68, wherein the antibody is a monoclonal antibody.

72. (New) The method of claim 23, wherein the differentiation agent comprises tumor necrosis factor- α (TNF- α).

73. (New) The method of claim 72, further comprising contacting the immature macrophage or the immature dendritic cell with a differentiation agent that enhances monocyte or dendritic cell maturation, wherein the differentiation agent comprises lipopolysaccharide.